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EXAMINER	
LE, BRIAN Q	
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2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/935,683	Applicant(s) HUANG ET AL.	
	Examiner Brian Q Le	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-35 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 9, 20-21 and 25-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claims 21 and 26, there is no support in the original disclosure that clearly illustrates of how the pattern recognizers are operating **in parallel** (emphasis added) to generate the plurality of recognition results. Referring to claims 9, 20 and 25, there is no support in the original disclosure regarding the **complementary** recognition algorithms or **complementary** (emphasis added) pattern recognizers.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The claims 17-19 and 27-29 are claiming equations without the denoting the definition of the symbols and the functions. The Applicant must clearly define all the symbols and the equations in the claims correspondingly with the original disclosure. Appropriate corrections are required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 4-16, 20-26 and 30-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Koike U.S. Patent No. 6,181,805.

Regarding claim 1, Koike teaches a method of processing an input object for pattern recognition comprising the steps of (abstract):

receiving an input object (FIG. 1, element 101);

segmenting a target object from the input object to form a segmented target object (FIG. 1, elements 102-103);

performing at least one transform (position shifting) on the segmented target object to generate at least one transformed object (FIG. 1, element 108); and

outputting the segmented target object (output of the segmented object comes out from FIG. 1, element 104) and the at least one transformed object (output of the transformed object comes out from FIG. 1, element 108) to at least one pattern recognizer (FIG. 1, element 106).

Regarding claim 2, Koike teaches the method wherein: the target object represents an image of a person's face (FIG. 2 and FIG. 3).

For claim 4, Koike further teaches the method wherein: the target object represents a biometric (face, mouth and eyes) (column 5, lines 45-50).

Referring to claim 5, Koike discloses the method wherein: the transform is a rotation transform (column 6, lines 15-25).

Regarding claim 6, Koike also discloses the method wherein: the transform is a boundary shift transform (affine transform that involves positional relation of the feature points) (column 13, lines 55-60).

For claim 7, Koike further discloses the method wherein: the transform is an affine transformation (column 13, lines 55-60).

For claim 8, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a single recognizer (please refer back to claim 1).

Referring to claim 9, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a plurality of complementary recognizers (complementary recognizers can be matching region method, similarity computer method and object detecting method) (column 4, lines 40-67).

For claim 10, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a plurality of substantially identically recognizers (complementary recognizers can be matching region method, similarity computer method and object detecting method) (column 4, lines 40-67).

Regarding claim 11, please refer back to claim 1 for the teachings. In addition, Koike further teaches the detecting a target object within the input object and segmenting the target object from the input object to form a plurality of segmented target objects (abstract, first 5 lines).

For claim 12, Koike teaches the method wherein the step of segmenting the target object from the input object to form a plurality of segmented target objects comprises: modifying the target object (adjusting size and position of the object) (column 4, lines 15-20).

Referring to claim 13, Koike discloses the method wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: modifying a scale of the target object (adjusting size of the object) (column 4, lines 15-20).

Regarding claim 14, Koike further teaches the method of wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: shifting at least one boundary surrounding the target object (affine transform that involves positional relation of the feature points) (column 13, lines 55-60).

For claim 15, Koike teaches the method wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: rotating the target object (column 6, lines 15-25).

Regarding claim 16, Koike teaches a method of aggregating a plurality of recognition results (The process of comparing the target object to the stored/dictionary images and accumulate the similarity to find the highest degree of similarity for the matching process) (column 2, lines 30-38) comprising the steps of:

receiving a segmented target object (receiving the segmented object comes out from FIG. 1, element 104) and at least one transform of the segmented target object (receiving of the transformed object comes out from FIG. 1, element 108);

performing at least one pattern recognition algorithm on the segmented target object (FIG. 1, element 102-103)and the at least one transform (FIG. 1, element 108) to generate a plurality of recognition results (FIG. 1, element 109);

aggregating the plurality of recognition results to determine a recognition decision (The process of comparing the target object to the stored/dictionary images and accumulate the similarity to find the highest degree of similarity for the matching process) (column 2, lines 30-38 and column 4, lines 55-67); and

outputting the recognition decision (FIG. 1, element 109 and 110).

For claims 20, please refer back to claims 9 for the teaching.

Referring to claim 21, Koike further shows the method wherein the performing step includes performing in parallel a plurality of substantially identical recognition algorithms (the facial cut-out recognition can process in parallel with the matching/similarity computing as recognition algorithms) (FIG. 1, elements 102, 106, and 107).

Regarding claim 22, please refer back to claims 1, 11, and 16 for the teachings and explanation.

For claims 23 - 26, please refer back to claim 5, 6 and 21 respectively for the teachings.

Regarding claim 30, please refer back to claims 1, 11, and 16 for the teachings and explanation.

For claim 31, please refer back to claims 12 or 13 or 14 or 15 for the teachings and explanations.

Regarding claims 32-35, please refer back to claims 1, 11, and 16 for the teachings and explanations.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Koike U.S. Patent No. 6,181,805 and Shustorovich U.S. Patent No. 5,542,006 as applied to claim 1.

Regarding claim 3, Koike indicates that the teaching of processing an input object for pattern recognition wherein the input object can be a face or other category (column 2, lines 15-18). Shustorovich further teaches the handwritten character/pattern recognition wherein the target object can be handwritten character (the detection of the center position of handwritten character) (column 8, lines 62-67). Modifying Koike's method of processing an input object for pattern recognition according to Shustorovich would able to represent handwritten character as target object. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Koike according to Shustorovich.

Allowable Subject Matter

9. Claims 17-19 and 27-29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

CONCLUSION

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to object extraction/segmentation and pattern recognition:

U.S. Pat. No. 6,453,069 to Matsugu, teaches method of extracting image from input image using reference image.

U.S. Pat. No. 6,671,404 to Kawatani, teaches method for recognizing patterns.

U.S. Pat. No. 6,067,369 to Kamei, teaches image feature extractor and image feature analyzer.

Ruiz-del-Solar, "Neural-based architectures for the segmentation of textures", I.E.E.E. Pattern Recognition 2000, pages: 1080-1083 vol. 3.

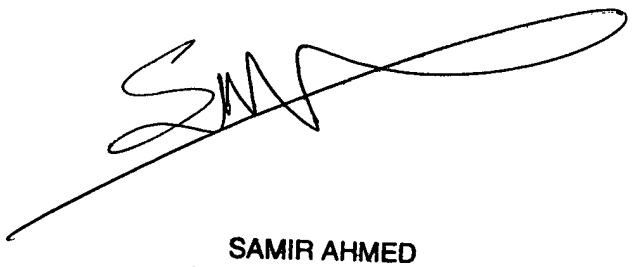
Avrithis, "Affine-invariant curve normalization for shape-base retrieval", I.E.E.E. Pattern Recognition, 2000, pages: 1015-1018 vol. 1.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL
September 16, 2004



SAMIR AHMED
PRIMARY EXAMINER